CLAIMS

What is claimed:

1. A wafer comprising:

a layer of solid diamond; and

a plurality of integrated circuits formed on the layer of solid diamond.

2. The wafer of claim 1 wherein the layer of solid diamond is at least 200 mm wide.

3. The wafer of claim 1 further comprising:

a layer of monocrystalline semiconductor material on the layer of solid diamond, the integrated circuits being formed on the layer of monocrystalline semiconductor material.

4. The wafer of claim 3 wherein the layer of monocrystalline semiconductor material is at least 200 mm wide.

5. The wafer of claim 3 wherein the layer of monocrystalline semiconductor material is a layer of monocrystalline silicon.

6. The wafer of claim 5 further comprising:

a layer of polysilicon on the layer of monocrystalline semiconductor material, the layer of monocrystalline silicon being located on the layer of polysilicon.

7. The wafer of claim 1 further comprising:

a plurality of contacts on the integrated circuit.

8. A wafer comprising:

a layer of solid diamond; and

a layer of monocrystalline semiconductor material on the layer of solid diamond.

9. The wafer of claim 8 wherein the layer of solid diamond is at least 200 mm wide.

10. The wafer of claim 9 wherein the layer of monocrystalline semiconductor material is at least 200 mm wide.

11. The wafer of claim 10 wherein the layer of monocrystalline semiconductor

material is a layer of monocrystalline silicon.

12. A singulated die comprising:

a layer of solid diamond; and

an integrated circuit formed on the layer of solid diamond.

13. The singulated die of claim 12 further comprising:

a layer of moncrystalline semiconductor material on the layer of solid diamond, the integrated circuit being formed on the layer of monocrystalline semiconductor material.

14. The singulated die of claim 13 wherein the layer of monocrystalline semiconductor material is a layer of monocrystalline silicon.

15. The singulated die of claim 14 further comprising:

a layer of polysilicon on the layer of monocrystalline silicon, the layer of monocrystalline silicon being located on the layer of polysilicon.

16. The singulated die of claim 12 further comprising:

a plurality of contacts on the integrated circuit.

17. The singulated die of claim 11 wherein the die has a rectangular outline when viewed from above.

18. An electronic assembly comprising:

a package substrate; and

a die mounted on the package substrate, the die including a layer of solid diamond and an integrated circuit formed on the layer of solid diamond.

19. The electronic assembly of claim 18 wherein the die includes a plurality of contacts on the integrated circuit and is located on top of the package substrate with the contacts at the bottom of the die.

20. The electronic assembly of claim 18 wherein the die includes a layer of moncrystalline semiconductor material on the layer of solid diamond, the integrated circuits being formed on the layer of monocrystalline semiconductor material.

21. The electronic assembly of claim 20 wherein the layer of monocrystalline semiconductor material is a layer of monocrystalline silicon.

22. The electronic assembly of claim 21 wherein a layer of polysilicon on the

layer of monocrystalline silicon, the layer of monocrystalline silicon being located on the layer of polysilicon.

23. The electronic assembly of claim 18 wherein the die includes a plurality of contacts on the integrated circuit.

24. The electronic assembly of claim 23 wherein a surface of the layer of solid diamond opposing the package substrate is exposed.

25. An electronic device comprising:

a layer of solid diamond; and

an integrated circuit formed on the layer of solid diamond.

26. The electronic device of claim 25 further comprising:

a layer of monocrystalline semiconductor material between the layer of diamond and the integrated circuit.

27. The electronic device of claim 26 wherein a layer of monocrystalline semiconductor material is a layer of polysilicon.

28. A method of making a plurality of dice comprising:

forming a layer of solid diamond and a layer of monocrystalline semiconductor material on one another;

manufacturing a plurality of integrated circuits on the layer of monocrystalline semiconductor material; and

severing the layer of solid diamond between the integrated circuits.

29. The method of claim 28 further comprising:

implanting ions into a surface of a wafer of monocrystalline semiconductor material, the layer of solid diamond thereafter being located over the surface of the monocrystalline wafer; and

shearing a portion of the monocrystalline wafer not implanted with the ions from a portion of the monocrystalline wafer implanted with the ions, the portion of the monocrystalline wafer implanted with the ions forming the layer of monocrystalline semiconductor material.

30. The method of claim 28 further comprising:

forming a support layer with the layer of solid diamond between the support layer and the layer of monocrystalline semiconductor material; and

severing the support layer so that respective portions thereof form part of respective ones of the dice.